

Serial No. 10/625,870  
Inventor Name: Howard J. Jacob  
Docket No. 650053.00002

**AMENDMENTS TO THE CLAIMS**

1. (Currently Amended) A rat diabetes model, wherein the rat develops symptoms of type II diabetes and progressive diabetic nephropathy with nodule formation and wherein the rat is a T2DN rat comprising mitochondrial genome [[at]] and loci on chromosomes 2 (D2Rat12), 11 (D11Rat93), 16 (D16Rat15), 19 (D19Rat59), X (DXMit4 and DXMit42) from a Fawn Hooded rat into a GK rat, wherein the T2DN rat does not comprise GK alleles at markers D3Rat57, D1 1Mgh5, D12Rat22, D1 Rat 291, D1Mit18, D1Mit34, D1Mgh12, and D1Rat85, and wherein the T2DN rat develops progressive proteinuria and glomerulosclerosis leading to diabetic nephropathy."
2. (Previously Presented) The rat of claim 1, wherein the rat is of strain T2DN Mimic<sub>MCW</sub>.
3. (Cancelled).
4. (Previously Presented) The T2DN rat of claim 1 wherein the rat is further genetically altered by introducing additional genetic material.
5. (Cancelled).
6. (Previously Presented) The T2DN rat of claim 1 wherein the T2DN rat is further genetically altered by introducing genetic deletions.

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7. (Currently Amended) A rat comprising mitochondrial genome [[at]] and loci on chromosomes 2 (D2Rat12), 11 (D11 Rat93), 16 (D16Rat15), 19 (D19Rat59), and X (DXMit4 and DXMit42) from a Fawn Hooded rat into a GK rat, wherein the rat does not comprise GK alleles at markers D3Rat57, D11Mgh5, D12Rat22, D1Rat 291, D1Mitl8, D1Mit34, D1Mghl2, and D1 Rat85, and wherein the rat is obtained by breeding the T2DN rat of claim 1 with a second rat.

8. (Currently Amended) A rat comprising mitochondrial genome [[at]] and loci on chromosomes 2 (D2Rat12), 11 (D11 Rat93), 16 (D16Rat15), 19 (D19Rat59), and X (DXMit4 and DXMit42) from a Fawn Hooded rat into a GK rat, wherein the rat does not comprise GK alleles at markers D3Rat57, D11Mgh5, D12Rat22, D1Rat291, D1Mitl8, D1Mit34, D1Mghl2, and D1 Rat85, wherein the rat is obtained by breeding the rat of claim 4 with a second rat.

9. (Previously Presented) A cell line derived from the rat of claim 1.

10. (Previously Presented) A cell line derived from the rat of claim 4.

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11. (Currently Amended) A method of evaluating the effect of a test compound on diabetes and diabetic nephropathy in a T2DN rat comprising the steps of:

(a) exposing the test compound to a T2DN rat comprising mitochondrial genome ~~[[at]]~~ and loci on chromosomes 2 (D2Rat12), 11 (D11Rat93), 16 (D16Rat15), 19 (D19Rat59), X (DXMit4 and DXMit42) from a Fawn Hooded rat into a GK rat wherein the rat does not comprise GK alleles at markers D3Rat57, D11Mgh5, D12Rat22, D1Rat291, D1Mit18, D1Mit34, D1Mgh12, and D1Rat185 and wherein the T2DN rat would develop progressive proteinuria and glomerulosclerosis leading to diabetic nephropathy in the absence of the test compound; and

(b) comparing the development of diabetes and diabetic nephropathy in the treated genetically altered T2DN rat with a control genetically altered T2DN rat which has not been exposed to the test compound.

12. (Currently Amended) A method of evaluating the effect of a test compound on diabetes and diabetic nephropathy in a T2DN rat comprising the steps of:

(a) exposing the test compound to a genetically altered T2DN rat comprising mitochondrial genome ~~[[at]]~~ and loci on chromosomes 2 (D2Rat12), 11 (D11Rat93), 16 (D16Rat15), 19 (D19Rat59), X (DXMit4 and DXMit42) from a Fawn Hooded rat into a GK rat, wherein the rat does not comprise GK alleles at markers D3Rat57, D11Mgh5, D12Rat22, D1Rat291, D1Mit18, D1Mit34, D1Mgh12, and D1Rat185 and wherein the T2DN rat would develop progressive proteinuria and glomerulosclerosis leading to diabetic nephropathy in the absence of the test compound; and

(b) comparing the development of diabetes and diabetic nephropathy in the treated genetically altered T2DN rat with a control genetically altered T2DN rat which has not been exposed to the test compound, wherein the treated and the control rats comprise the same genetic modification.

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13-17. (Cancelled).